



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,516	11/09/2001	Po-Hua Fang	YUSO-132	3082

7590 09/22/2005

Raymond Sun
12420 Woodhall Way
Tustin, CA 92782

EXAMINER

LEE, CHEUKFAN

ART UNIT	PAPER NUMBER
----------	--------------

2622

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,516

Applicant(s)

FANG, PO-HUA

Examiner

Cheukfan Lee

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,6 and 11-17 is/are rejected.
- 7) ☒ Claim(s) 5 and 7-10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2622

1. Claims 1-17 are pending. Claim 1 is independent.

2. The drawings are objected to because of the following:

In Fig. 8, box 50, "of colored pattern layer" should be changed to – with colored pattern layer --;

box 52, "Feeding in appropriate length" should be changed to – Feeding by appropriated length --; and

box 53, "Calculating" should read – Calculating --.

In Fig. 9, box 50, "of colored pattern layer" should be changed to – with colored pattern layer --;

box 52, "Feeding in appropriate length" should be changed to – Feeding by appropriate length --; and

box 53, "Calcuating" should read – Calculating --.

3. The title of the invention is objected to. "A method for ..." should read – A Method of ... --.

4. The abstract is objected to because of the following:

Line 4 of page 15, "A method for" should read – A method of --;

Lines 4-6 of the page, the language "A method for detecting the alignment of document in an automatic document feeder provides an optical scanner that has an

Art Unit: 2622

automatic document feeder and a document” is awkward because technically, it is improper to say that a “method” “provides” “an optical scanner”;

Line 7 of the page, “in corresponding to” is not grammatical and should be change to either – in correspondence with -- or -- corresponding to --;

Line 8 of the page, “at least a side edge” should read – at least one side edge --;

Line of the page, “to an appropriate length” should read – by an appropriate length --; and

Line 15 of the page, “calculated out by the result of comparing the first” should read – calculated from the result of comparing the first image retrieval and the second image retrieval --.

5. The disclosure is objected to because of the following informalities:

The language used in the specification contains many minor errors. Maybe the occurrences of errors are due to the fact that the specification is English-translation of a foreign-language application. **The following are a few examples of errors that should be corrected:**

Page 6, lines 17 and 26-27, “in corresponding to”;

line 25, “a preferable embodiment”, which should read – a preferred embodiment --;

Page 7, lines 2 and 19, “preferable embodiments”;

lines 5-6, the statement “The width of the layer 22 is wider than that of the document 30”, which is valid only for Fig. 4E and not for the rest of the figures

Art Unit: 2622

mentioned in the same paragraph, and therefore, Fig. 4E should be specified when stating such;

line 21, "Wherein" should be deleted;

lines 21-22, still, the sentence "Fig. 5A through Fig. 6B is the ... of the scan line", which is not grammatical;

lines 22-23, "the scan line 22", which should be -- the scan line 17 --;

Page 8, line 1, "provided of easy detection", which should read -- provided for easy detection --;

line 23, "Wherein", which should be deleted from the sentence.

There are many more such minor errors throughout the specification.

Appropriate correction is required.

6. Claims 1-17 are objected to because of the following:

In claims 1-17, line 1 of each claim, "method for" should read -- method of --.

In claim 1, line 5 of the claim, "in corresponding to" should be changed to either -- in correspondence with -- or -- corresponding to --;

line 6 of the claim, "has at least one" should be changed to -- having at least one --;

still line 6, "and when" should be changed to -- wherein when --;

Art Unit: 2622

lines 10-11 of the claim, "a first image retrieval is made for the document placed on the scanning window" should read – and making a first image retrieval from the document placed on the scanning window --;

line 12 of the claim, "an appropriate length of the document is fed in" should read – feeding the document by an appropriate length – or – feeding the document by an appropriate distance --;

lines 13-14 of the claim, "a second image retrieval is made for the document placed on the scanning window" should read – making a second image retrieval from the document placed on the scanning window --; and

line 15 of the claim, "a slant value is calculated out from" should read – calculating a slant value from --.

In claim 9, line 3 of the claim, the language "the electronic calculation device is a software calculation program" is improper since "a software calculation program" is not an electronic calculation device but just a software program.

In claim 11, line 3 of the claim "comprising the steps of" should be changed to – the method further comprises the step of --.

In claim 13, line 3 of the claim, "comprising the steps of" should be changed to – the method further comprises the step of --; and

lines 4-5 of the claim, "scanning the document is begun" should read – executing scanning the document --;

In claim 14, line 3 of the claim, "comprising the steps of" should be changed to – the method further comprises the step of --; and

lines 4-5 of the claim, "scanning the document is stopped" should be changed to – stopping scanning the document --.

In claim 15, line 3 of the claim, "comprising the steps of" should be changed to – the method further comprises the step of --.

In claim 17, line 2 of the claim, "the step H" lacks antecedent basis; it seems that "claim 13" should be changed to -- claim 14 – since the basis for "the step H" is set forth in claim 14, not claim 13; and

line 3 of the claim, "comprising the steps of" should be changed to – the method further comprises the step of --.

Claims 2-17 are objected to as dependent upon objected claim 1.

Claim 17 is objected to as being dependent upon objected claim 13.

Claims 15 and 16 are objected to as being dependent upon objected claim 14.

Claim 16 is objected to as being dependent upon objected claim 15.

Art Unit: 2622

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6, 11, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Pasco et al. (U.S. Patent No. 6,064,778).

Regarding claim 1, Pasco et al. discloses a method of detecting skew of a document in a feed-through scanner having a mechanism for moving a document relative to a contact image sensor (CIS) (Figs. 1 and 2, col. 4, lines 29-36, col. 5, lines 10-11), which is considered an automatic document feeder since it feeds the document through automatically. The document feeder has a colored pattern layer (contrasting background color pattern provided by the feed roller) corresponding to the scanning window (of the CIS) (col. 5, lines 10-11, col. 4, lines 50-53 and 60-65). When the document having at least one side edge is fed into the document feeder, a side edge of the document is just located between the scanning window (of the CIS) and the colored pattern layer (the roller) (col. 5, lines 10-11, col. 4, lines 32-35). The document feeder is inherently actuated to feed in the document. Since image data of the document and the colored pattern layer (shown in Fig. 5) is obtained by the CIS while the document is being fed, it is inherent that the CIS performs a plurality of readings (of different scan lines on the document and the colored pattern layer) as the document is fed through, with a predetermined length between different scan lines. This means that the CIS

Art Unit: 2622

performs a first reading (of a scan line), the document is fed by an appropriate length, and the CIS performs another reading (of another scan line), which meet the limitations of the claimed steps B, C and D. The different readings meet the claimed first and second image retrievals.

In the process of calculating the skew angle of the document, the establishing of the best fit of a straight line to the set of points obtained from the two readings discussed above involves comparing the image data from the first reading and comparing the data from the second reading (col. 7, lines 39-42 and 59-60, col. 8, line 41 – col. 9, line 21). The value of the calculated skew angle meets the claimed slant value calculated from the result of comparing the first image retrieval and the second image retrieval. Please note that the claimed step E language is interpreted such that the first image retrieval is compared, and the second image retrieval is compared, but not with each other, so as to be met by Pasco et al., since the “recorded points” of Pasco et al. from the data of the first reading and the data of the second reading are compared not with each other but each to points of the “straight line” (col. 8, lines 41-47).

Regarding claim 2, the color of the colored pattern layer (of the feed roller) is made different from the color of the document in order to achieve high contrast between the pattern layer and the document (col. 4, lines 60-67).

Regarding claim 3, the side edge (left or right side) of the document is parallel to the feeding direction of the document in the document feeder (when fed without skew) (Figs. 2 and 5).

Regarding claim 4, a first distance as claimed is inherent in Pasco et al. since the skew angle is calculated by establishing an angle between the detected document edge and a reference orientation, which is a line positioned in the colored pattern layer (the image of the roller) (Figs. 7 and 8, col. 9, lines 15-21 and 49-60), which calculation inherently includes a distance between the detected edge of the document and a point of the reference line.

Regarding claim 6, the reference point located in the reference line is inherently positioned on a scan line of the scanning window of the CIS (contact image sensor), or else the CIS could not have sensed the reference line (210 in Fig. 7) produced with the image of the colored pattern layer (of the feed roller) shown in dark dots in Fig. 7 (col. 9, lines 15-21 and 49-50).

Regarding claim 11, Pasco et al. further discloses comparing the slant value (the calculated skew angle) to a preset value (20 degrees) (col. 13, lines 41-46).

Regarding claim 12, the claim recites "the preset value ... is a value that is tested and provided for the document appropriately fed into the scanning area". The claim language does not define how the preset value is tested. Therefore, the claim limitation is met by Pasco et al. The preset value, which is twenty (20) degrees, is considered tested since Pasco et al. concluded that it is unlikely that the actual skew angle will exceed twenty (20) degrees, and therefore, such a large angle is ore likely the result of error rather than the result of excessive skew (col. 13, lines 41-46).

Art Unit: 2622

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pasco et al. (U.S. Patent No. 6,064,778).

Pasco et al. is discussed for claims 1 and 11 above.

Claim 13 recites "if the slant value is smaller than the preset value, scanning the document is begun". In Pasco et al., if the calculated slant value (calculated value of the skew angle) exceeds the preset value, twenty (20) degrees, the skew angle is reset to zero (col. 13, lines 41-46). Pasco et al. does not specifically disclose that scanning the document is begun when the skew angle is found less than the preset value twenty (20) degrees, or scanning the document is stopped after setting the skew angle to zero. However, since only a relatively small number of scan lines of the document are used to calculate the skew angle (Fig. 7), and because of the flexibility in ways of implementing the invention of Pasco et al. (col. 5, lines 30-43), one of ordinary skill in the art would have realized the power-reduction advantage of executing the scanning of the document if the calculated skew angle does not exceed the preset value twenty (20) degrees. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modifying the document feed-through type scanner control feature of Pasco et al. such that scanning the document is executed if the skew

Art Unit: 2622

angle is smaller than the preset value (twenty degrees) in order to reduce power consumption.

11. Claims 14-17, insofar as claim 17 is understood to depend on claim 14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pasco et al. (U.S. Patent No. 6,064,778) in view of Kerschner (U.S. Patent No. 5,895,928).

Pasco et al. is discussed for claims 1 and 11 above.

Regarding claims 14 and 17, claims 14 recites "if the slant value is larger than the preset value, scanning the document is stopped", and claim 17 recites "setting off an alarm" after the scanning the document is stopped. Pasco et al. discussed for claim 11 above does not disclose the claimed limitations. In Pasco et al., if the calculated slant value (calculated value of the skew angle) exceeds the preset value, twenty (20) degrees, the skew angle is reset to zero (col. 13, lines 41-46). Pasco et al. does not explicitly disclose that scanning the document is stopped after setting the skew angle to zero, and setting off an alarm.

Kerschner discloses an automatic document skew detection method and apparatus having an automatic document feeder (23 in Fig. 1). The automatic document feeder (23) has a color strip (27b in Fig. 2) attached thereto for assisting in detecting a skew of the document being fed. The controller of the scanner stops the scan process and sends an error message to the user (Figs. 1, 2 and 8, col. 4, lines 12-15 and 20-56). The sending of the error message is a form of setting off an alarm as claimed in claim 17.

Pasco et al. discloses flexibility in ways of implementing the invention of Pasco et al. (col. 5, lines 30-43). One of ordinary skill in the art would have realized a power-reduction advantage of stopping the scanning the document if the calculated skew angle exceeded the preset value twenty (20) degrees.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modifying the document feed-through type scanner control feature of Pasco et al. as taught by Kerschner such that scanning the document is stopped if the skew angle is larger than the preset value (twenty degrees) and send an error message (which is a form of setting off an alarm) to the operator in order to reduce power consumption and alert the operator.

Regarding claims 15 and 16, the obvious method of Pasco et al. discussed for claim 14 above does not comprise taking the document manually and repeating the steps B through E after the scanning the document is stopped as claimed in claims 15 and 16.

Based on the reason of obviousness given for claim 14 above that it would have been obvious to modify the feed-through scanner control such that scanning the document is stopped if the skew angle is greater than the preset value twenty (20) degrees, and because the large skew angle is the result of error rather than the result of excessive skew as stated by Pasco et al. (col. 13, lines 41-46), one of ordinary skill in the art would have realized that removing the document manually and repeating the claimed steps B through E allows the document to be reproduced. Therefore, it would

Art Unit: 2622

have been obvious to one of ordinary skill in the art at the time the invention was made to remove the document and repeat the claimed steps B through E in order to allow the document to be rescanned.

12. Claims 5, 7-10, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and to overcome the objection(s) set forth in this Office Action.

13. The following is an examiner's statement of reasons for allowance:

Claim 5 would be allowable because Pasco et al. does not disclose a second distance as claimed in addition to the first distance of claim 4 on which claim 5 depends. Claim 5 requires that "a second distance of the second image retrieval is a distance retrieved from the side edge to the reference point [in the colored pattern layer] after an appropriate length [of the document] is fed". In Pasco et al., the skew angle (the value of which corresponds to the claimed slant value) is calculated inherently using a first distance between the detected document edge and the reference line as discussed for claim 4 above, but "a second distance" as claimed is not inherently used in the calculation of the skew angle.

Claims 7-10 depending on claim 5, directly or indirectly, would be allowable for the reason given for claim 5.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Barry et al. (U.S. Patent No. 5,517,332) discloses a document feed-through type scanner having document skew detecting sensors (Figs. 7A and 7B).

Ui (U.S. Patent No. 6,340,984) discloses an image forming apparatus for correcting an angle of inclination of the medium (Fig. 4, col. 5, lines 40-57).

Washio et al. (U.S. Patent No. 6,301,022) discloses a correction method of document inclination angle using photo sensors (Fig. 1b).

Ishikawa (U.S. Patent No. 5,455,690) discloses an image reading apparatus having document skew sensors (91 and 92) for detecting skew of an original bed fed (Figs. 5A-5C).

Petilli (U.S. Patent No. 5,249,069) discloses a method and an apparatus for automatic alignment of front and rear scanning cameras, having a document skew detection feature (Figs. 1 and 4).

Mizubata et al. (U.S. Patent No. 6,888,650) discloses an apparatus for and a method of reading a document, having document edge sensors (S1 and S2) and a

controller for detecting and calculating a skew angle of the document in a feeding path (Figs. 4-11).

Takei et al. (U.S. Patent No. 5,918,877) discloses a cut sheet feeding device having a function of detecting a skew of the sheet to be feed using a plurality of document sensors arrange in a direction perpendicular to the document feeding direction (Figs. 2B, 2C and 6A-9D).

Yoshida et al. (U.S. Patent No. 6,718,071) discloses an image reading apparatus and method, having a plurality of document sensors arranged in a direction perpendicular to the document conveying direction (Figs. 5-8).

Ogura et al. (U.S. Patent NO. 5,526,141) discloses an original reading apparatus having a non-cylindrical original contact device for urging the original toward the image-reading device (Figs. 6A-6C).

Ijuin et al. (U.S. Patent No. 5,661,571) discloses an image reading device havening a device for correction skew of a document in a document-feeding path.

Ando (U.S. Patent No. 5,673,126) discloses an image reading apparatus having a pair of markings on a white lever reference member opposing the image sensor for determined the reading range of the image sensor for reading a document being fed (Figs. 3 and 4).

Lee (U.S. Patent No. 6,134,027) discloses a method of and a device for determining scanning dimension, having a detection unit (212) comprising a plurality of strias (Figs. 1-2e, 4, 6, and 7).

Sevier et al. (U.S. Patent No. 5,912,448) discloses a method of and an apparatus for detecting paper skew in an image using an image sensor having three portions, a primary vision transducer portion (10) and right and left skew detection portions (12 and 13) (Figs. 1-5).

Sakamoto (Japanese Patent Publication No. 11-301883) discloses a paper feeder having two tip sensor (11A and 11B) installed on a document mount (7) at a prescribed distance from each other for detecting skew of a document being fed.

Tsutsumi (Japanese Patent Publication No. 55-083368) discloses a facsimile apparatus for detecting a slant of an original document being mis-fed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cheukfan Lee
September 13, 2005

A handwritten signature in black ink, appearing to read "Cheukfan Lee", with a stylized flourish above the name.